Inspection Report For Well: UT20736 - 04380

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/10/2013

Others: Ajayi, Christopher — Time: 12:53 am (pm)

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Steinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 28-06		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SENW S28 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1710 /
Last MIT:	Pass 8/21/2011	***Annulus Pressure From Last MIT:***	1780

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)

- [ ] Construction / Workover
- [ ] Plugging
- [ ] Post-Closure
- [ ] Response to Complaint
- [x] Routine
- [ ] Witness MIT
- [ ] Other

ICIS Entered
Date 12/27/13
Initials JJ

OBSERVED VALUES:

Tubing Gauge:	[x] Yes / [ ] No	Pressure: U: 1269 / L: ____ psig	Gauge Range: Scada ____ psig	Gauge Owner:	[ ] EPA / [x] Operator
Annulus Gauge:	[x] Yes / [ ] No	Pressure: 0 psig	Gauge Range: opened ____ psig	Gauge Owner:	[x] EPA / [ ] Operator
Bradenhead Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator
Pump Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator

Operating Status: (Select One)
- [x] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

See page 2 for photos, comments, and site conditions.

U2 Entered
Date 12/17/13
Initial JR

GREEN | BLUE | CBI
TAB | | 1 |

Inspection Report For Well: UT20736 - 04380 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/10/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

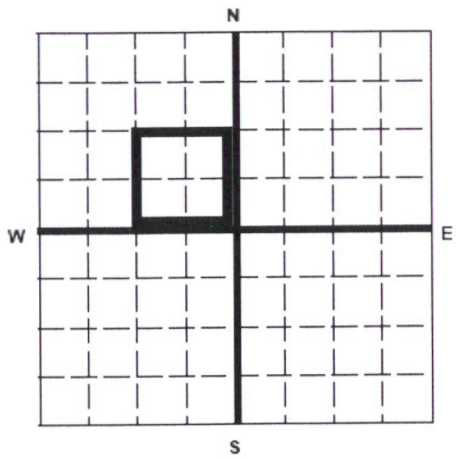
EPA

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04380

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 1817 ft. frm (N/S) N Line of quarter section
and 1897 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-06

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	0	0	0		0	0
February	16	0	0	0		0	0
March	16	41	180	377		0	0
April	16	448	723	3421		0	0
May	16	890	979	6226		0	0
June	16	229	987	1545		0	0
July	16	0	0	0		0	0
August	16	0	0	0		0	0
September	16	0	0	0		0	0
October	16	0	0	0		0	0
November	16	0	0	0		0	0
December	16	0	0	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor	Not Entered	03/21/2017

EPA Form 7520-11 (Rev. 12-11)

Date 4/5/17
Initial JB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-06 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345320**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/26/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0030
pH:	8.30
Calculated TDS (mg/L):	8114.55
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	40.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2439.39	Chloride (Cl):	3000.00
Potassium (K):	16.77	Sulfate (SO_4):	80.00
Magnesium (Mg):	48.17	Bicarbonate (HCO_3):	2196.00
Calcium (Ca):	111.79	Carbonate (CO_3):	
Strontium (Sr):	7.11	Hydroxide(HO):	
Barium (Ba):	23.41	Acetic Acid (CH_3COO)	
Iron (Fe):	147.55	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	12.01	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.07	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	1.11	Bromine (Br):	
Aluminum (Al):	0.14	Silica (SiO_2):	31.17
Lithium (Li):	2.86	Calcium Carbonate ($CaCO_3$):	
Boron (B):	3.29	Phosphates (PO_4):	34.45
Silicon (Si):	14.57	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.97	91.15	1.60	13.51	5.69	36.25	4.22	107.25	0.00	0.00	0.00	0.00	0.00	0.00	12.11	6.27
149.00	267.00	2.02	92.02	1.50	13.40	5.63	36.25	4.31	107.26	0.00	0.00	0.00	0.00	0.00	0.00	11.85	6.27
168.00	483.00	2.10	93.24	1.43	13.29	5.61	36.25	4.41	107.27	0.00	0.00	0.00	0.00	0.00	0.00	11.63	6.27
187.00	700.00	2.18	94.32	1.37	13.20	5.61	36.25	4.51	107.27	0.00	0.00	0.00	0.00	0.00	0.00	11.44	6.27
206.00	917.00	2.28	95.21	1.33	13.13	5.63	36.25	4.60	107.28	0.00	0.00	0.00	0.00	0.00	0.00	11.28	6.27
224.00	1133.00	2.39	95.91	1.30	13.08	5.67	36.25	4.69	107.28	0.00	0.00	0.00	0.00	0.00	0.00	11.14	6.27
243.00	1350.00	2.50	96.46	1.28	13.05	5.73	36.25	4.78	107.28	0.00	0.00	0.00	0.00	0.00	0.00	11.02	6.27
262.00	1567.00	2.62	96.87	1.28	13.04	5.80	36.25	4.86	107.28	0.00	0.00	0.00	0.00	0.00	0.00	10.92	6.27
281.00	1783.00	2.74	97.17	1.28	13.05	5.89	36.25	4.93	107.28	0.00	0.00	0.00	0.00	0.00	0.00	10.83	6.27
300.00	2000.00	2.87	97.38	1.30	13.07	5.98	36.25	5.00	107.29	0.00	0.00	0.00	0.00	0.00	0.00	10.76	6.27

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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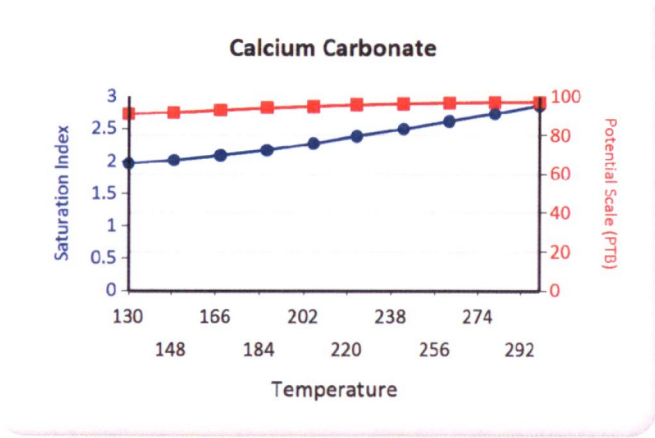
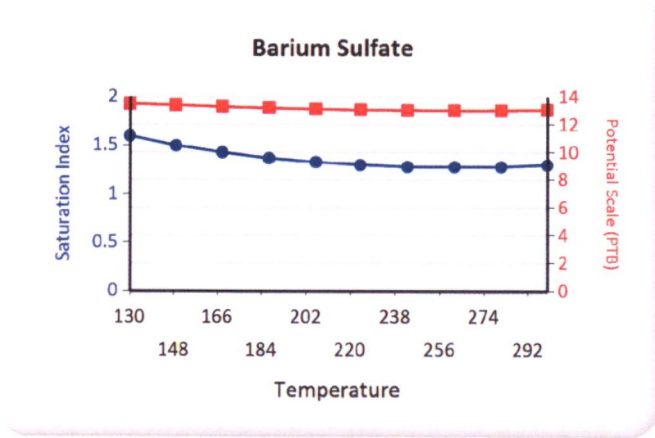
Water Analysis Report

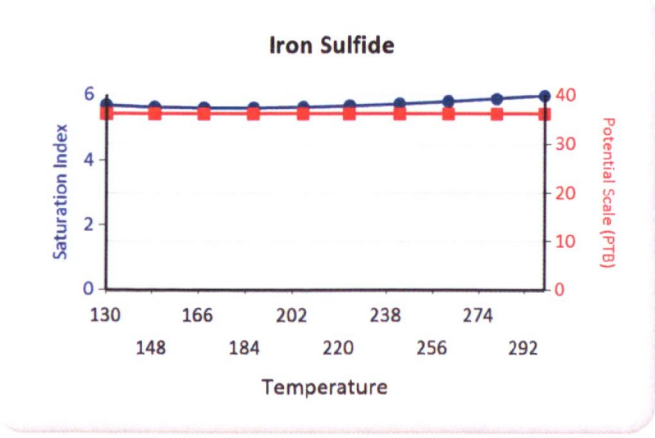
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.74	8.06	11.59	0.03	4.83	45.63	2.83	28.08	14.35	72.30
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95	8.07	11.15	0.03	5.57	52.64	3.23	31.37	14.81	72.30
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	8.07	10.77	0.03	6.36	60.87	3.67	34.98	15.34	72.31
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.32	8.07	10.43	0.03	7.15	68.07	4.12	37.78	15.89	72.31
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.49	8.07	10.14	0.03	7.94	73.66	4.57	39.67	16.45	72.31
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	8.07	9.87	0.03	8.71	77.41	5.02	40.81	17.02	72.31
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.77	8.07	9.64	0.03	9.47	79.47	5.47	41.44	17.59	72.31
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.89	8.08	9.44	0.03	10.20	80.36	5.90	41.77	18.15	72.31
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.99	8.08	9.26	0.03	10.91	80.69	6.33	41.94	18.71	72.31
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.07	8.08	9.09	0.03	11.60	80.79	6.74	42.03	19.25	72.31

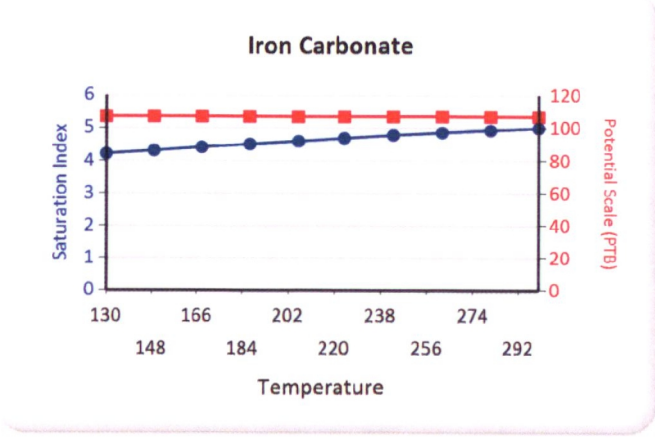
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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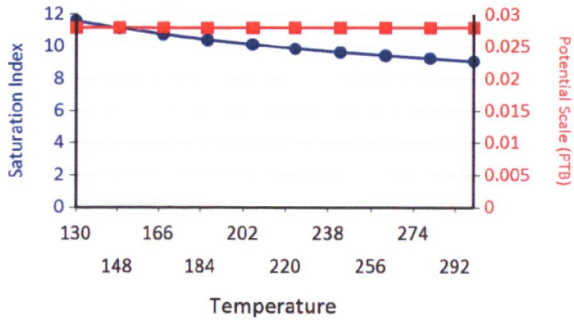
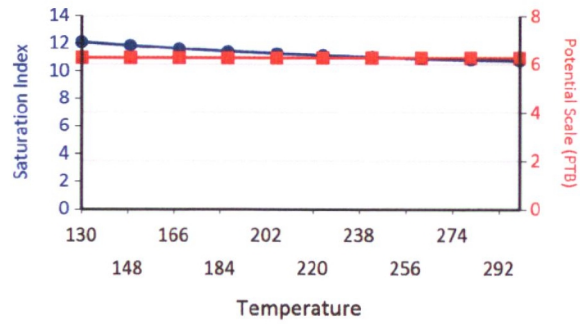
Water Analysis Report

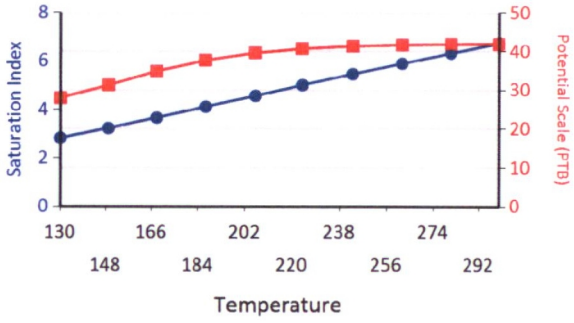
Lead Sulfide



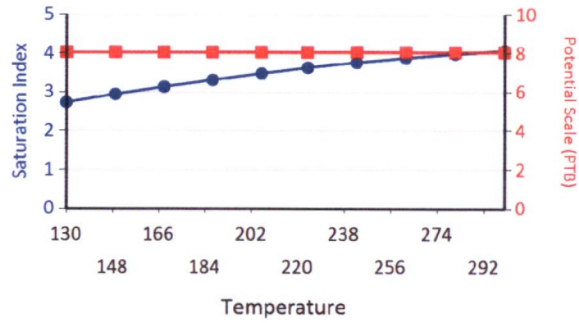
Zinc Sulfide



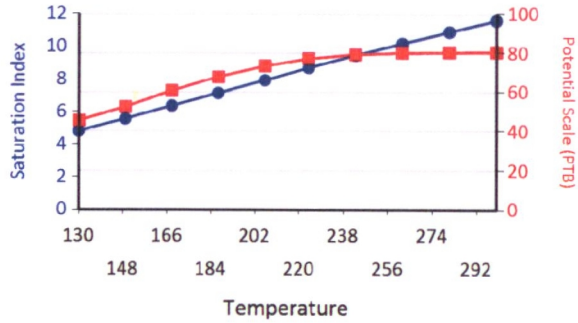
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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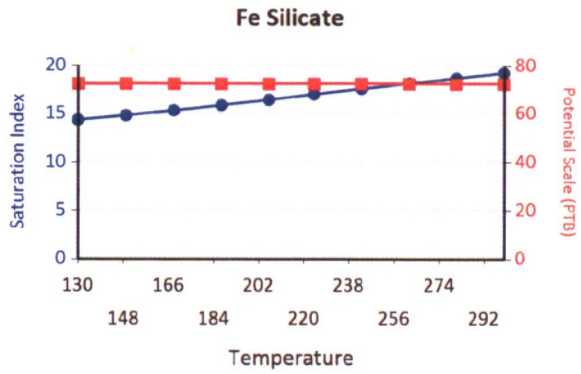


OMB No. 2040-0042 Approval Expires 11/30/2014

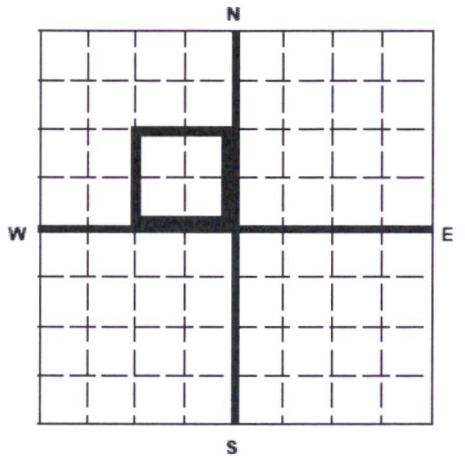
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 04380

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 1817 ft. frm (N/S) N Line of quarter section
and 1897 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/2/16
Initial BJ

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-06

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1099	1164	4157		0	0
February	15	1134	1197	3775		0	0
March	15	1089	1248	4651		0	0
April	15	1105	1160	4348		0	0
May	15	1186	1197	4942		0	0
June	15	364	1221	973		0	0
July	15	6	33	0		0	0
August	15	0	0	0		0	0
September	15	0	0	0		0	0
October	15	2	6	0		0	0
November	15	4	7	0		0	0
December	15	0	1	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

GREEN BLUE CBI
TAB 2

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 28-06 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327656**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0034
pH:	8.50
Calculated TDS (mg/L):	8865.64
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	25.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3155.27	Chloride (Cl):	5000.00
Potassium (K):	22.80	Sulfate (SO_4):	150.00
Magnesium (Mg):	41.99	Bicarbonate (HCO_3):	296.00
Calcium (Ca):	128.15	Carbonate (CO_3):	
Strontium (Sr):	5.78	Acetic Acid (CH_3COO)	
Barium (Ba):	3.72	Propionic Acid (C_2H_5COO)	
Iron (Fe):	17.63	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	15.91	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.42	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.48	Silica (SiO_2):	27.49
Aluminum (Al):	2.30	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	1.33	Phosphates (PO_4):	18.99
Boron (B):	4.83	Oxygen (O_2):	
Silicon (Si):	12.85		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	1.32	26.23	0.86	1.91	4.32	9.72	2.45	12.66	0.00	0.00	0.00	0.00	0.00	0.00	11.46	8.31
167.00	267.00	1.26	22.85	0.89	1.92	4.33	9.72	2.37	12.60	0.00	0.00	0.00	0.00	0.00	0.00	11.60	8.31
153.00	483.00	1.21	20.80	0.92	1.95	4.36	9.72	2.30	12.55	0.00	0.00	0.00	0.00	0.00	0.00	11.76	8.31
140.00	700.00	1.16	19.03	0.96	1.97	4.39	9.72	2.22	12.48	0.00	0.00	0.00	0.00	0.00	0.00	11.94	8.31
127.00	917.00	1.12	17.51	1.02	2.00	4.44	9.72	2.15	12.40	0.00	0.00	0.00	0.00	0.00	0.00	12.13	8.31
113.00	1133.00	1.08	16.25	1.09	2.03	4.50	9.72	2.08	12.31	0.00	0.00	0.00	0.00	0.00	0.00	12.35	8.31
100.00	1350.00	1.04	15.23	1.17	2.06	4.58	9.72	2.00	12.19	0.00	0.00	0.00	0.00	0.00	0.00	12.57	8.31
87.00	1567.00	1.01	14.42	1.26	2.09	4.67	9.72	1.92	12.07	0.00	0.00	0.00	0.00	0.00	0.00	12.82	8.31
73.00	1783.00	0.98	13.82	1.37	2.12	4.78	9.73	1.85	11.93	0.00	0.00	0.00	0.00	0.00	0.00	13.09	8.31
60.00	2000.00	0.96	13.41	1.50	2.15	4.91	9.73	1.77	11.78	0.00	0.00	0.00	0.00	0.00	0.00	13.38	8.31

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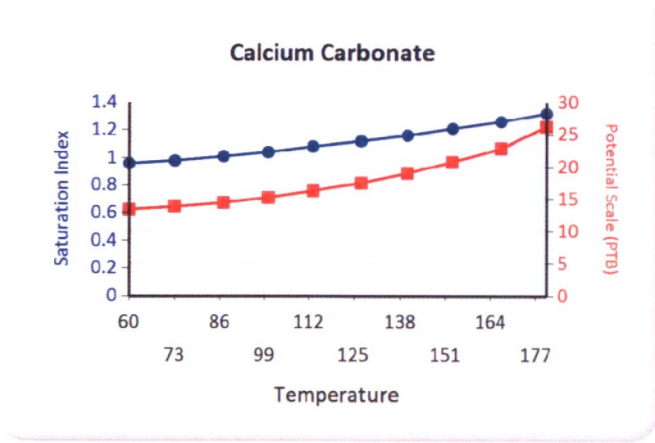
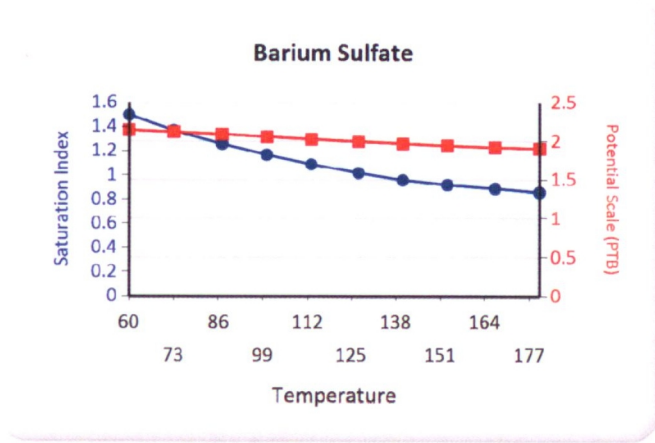
Water Analysis Report

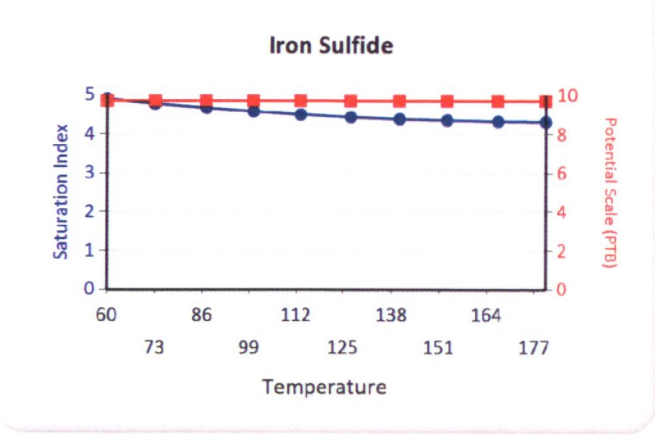
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45	10.60	11.16	0.17	6.84	20.20	4.07	13.06	12.50	13.65
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	10.55	11.40	0.17	6.33	15.98	3.78	10.55	12.16	13.60
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19	10.49	11.68	0.17	5.87	13.50	3.52	9.10	11.86	13.54
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05	10.41	11.98	0.17	5.39	11.46	3.25	7.89	11.57	13.46
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90	10.28	12.30	0.17	4.91	9.78	2.99	6.88	11.28	13.35
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74	10.09	12.65	0.17	4.42	8.40	2.72	6.04	10.99	13.20
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	9.80	13.02	0.17	3.92	7.25	2.45	5.33	10.71	13.01
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.38	9.38	13.43	0.17	3.42	6.26	2.18	4.71	10.42	12.80
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	8.77	13.87	0.17	2.90	5.37	1.91	4.15	10.14	12.55
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	7.92	14.34	0.17	2.38	4.53	1.64	3.64	9.87	12.30

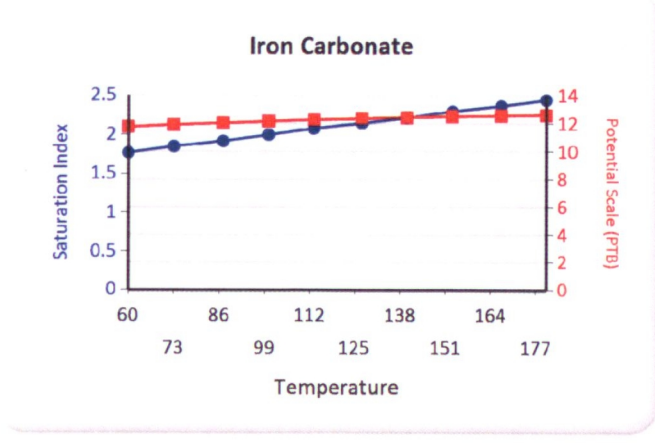
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

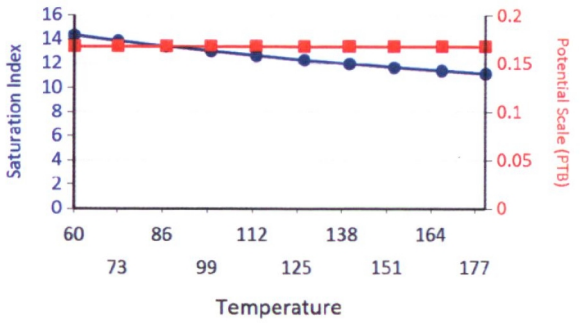




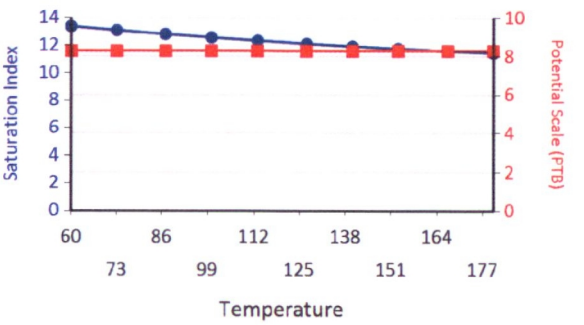




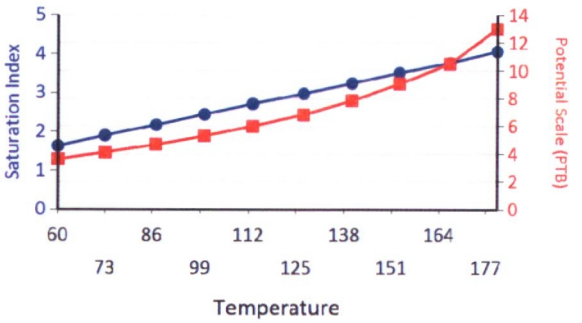
Lead Sulfide



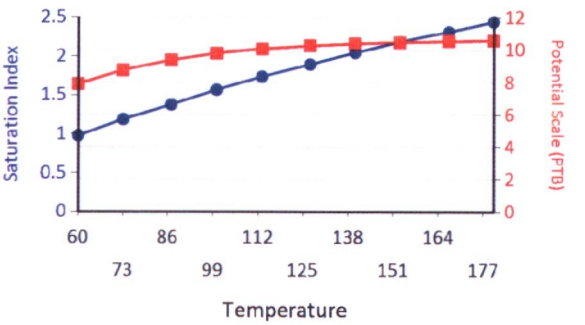
Zinc Sulfide



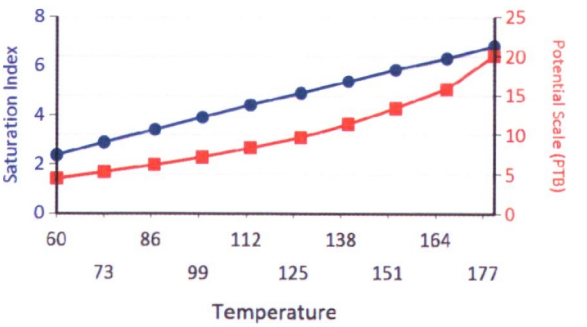
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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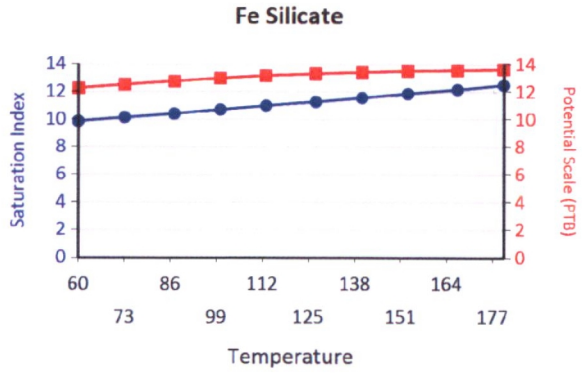


UT20736-04380

PETROGLYPH EXECUTIVE OFFICES

RECEIVED

SEP 07 2016

Office of Enforcement, Compliance and Environmental Justice (UFO)

August 25, 2016

Gary Wang
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Test
Ute Tribal 28-06

Mr. Wang:

Please find enclosed the 5-year Mechanical Integrity Test for the Ute Tribal 28-06.

If any questions, please reach me at (208) 685-9711.

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

U2 Entered
Date 10/05/16
Initial GV

TAB	GREEN	BLUE	CBI
		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 8/22/16

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 28-06 Type: ER SWD **Status:** AC TA UC

Field: ANTELOPE CREEK

Location: 28-06 Sec: ___ T ___ N / S R ___ E / W County: DUCHESNE State: UT

Operator: PETROGLYPH ENERGY

Last MIT: / / **Maximum Allowable Pressure:** _____ **PSIG**

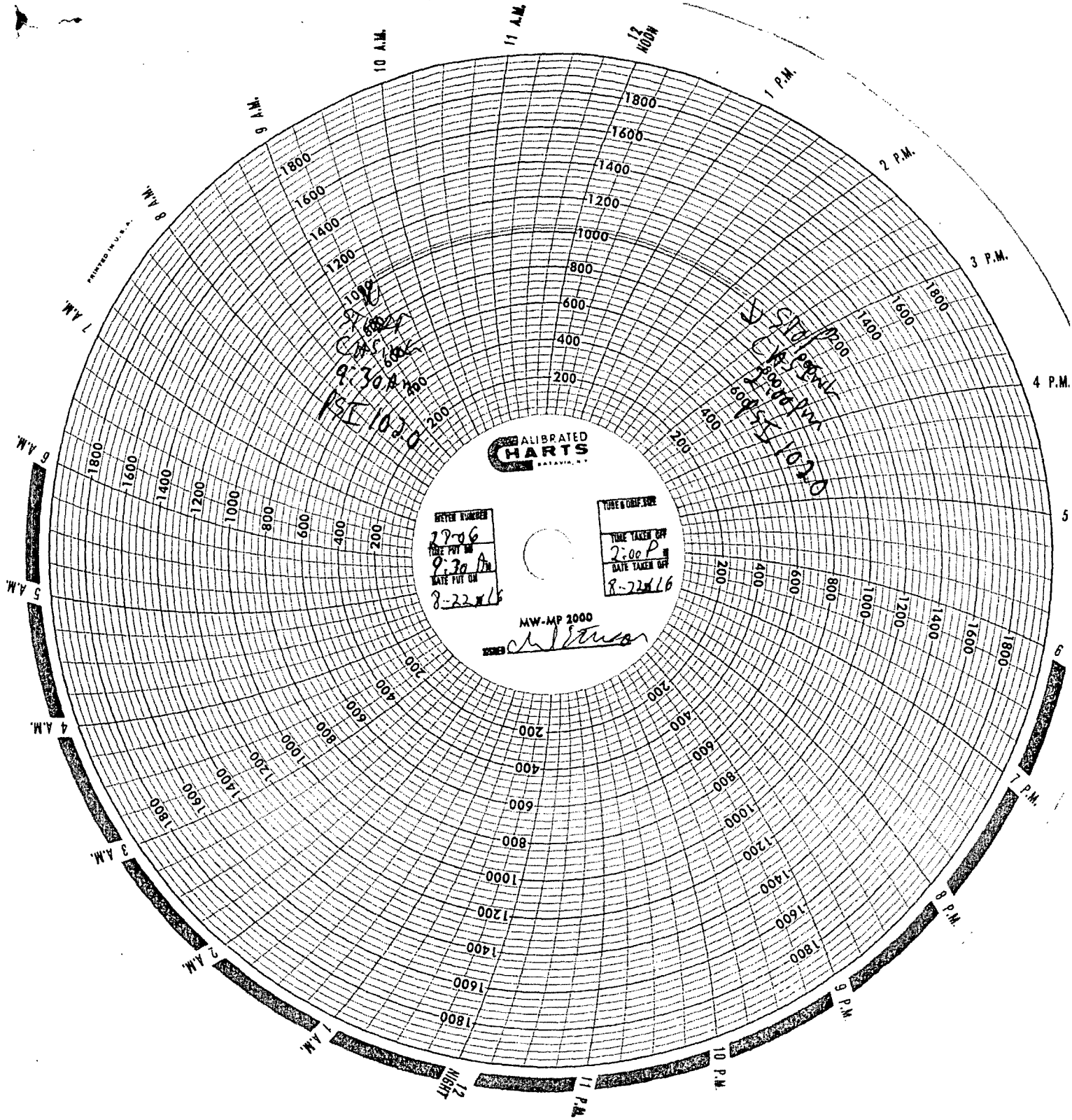
Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: _____ **bpd**

Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	0 psig	psig	psig
End of test pressure	0 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	1020 psig	psig	psig
5 minutes	1020 psig	psig	psig
10 minutes	1020 psig	psig	psig
15 minutes	1020 psig	psig	psig
20 minutes	1020 psig	psig	psig
25 minutes	1020 psig	psig	psig
30 minutes	1020 psig	psig	psig
4½ Hours ~~minutes~~	1020 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED CHARTS
METER NUMBER
2906
TIME PUT ON
9:30 A.M.
DATE PUT ON
8-22-16
TIME & DIST. SIDE
TIME TAKEN OFF
2:00 P.M.
DATE TAKEN OFF
8-22-16
MW-MP 2000
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5
6
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
12 MIDNT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.

OMB No. 2040-0042 Approval Expires 12/31/2011

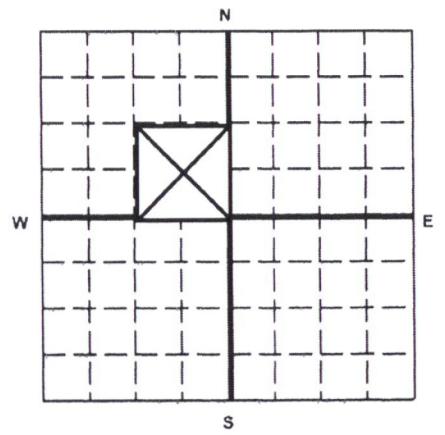
United States Environmental Protection Agency
Washington, DC 20460

EPA

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04380

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of NW 1/4 of Section 28 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 1817 ft. frm (N/S) N Line of quarter section and 1897 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 28-06

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	960	1073	3499		0	0
February	14	1094	1126	3667		0	0
March	14	1074	1136	4513		0	0
April	14	1084	1099	3822		0	0
May	14	1115	1109	4429		0	0
June	14	1127	1215	4083		0	0
July	14	1105	1158	3965		0	0
August	14	1184	1204	4530		0	0
September	14	1154	1201	3955		0	0
October	14	1168	1230	4541		0	0
November	14	1222	1241	4500		0	0
December	14	1204	1219	4797		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/5/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

Multi-Chem Analytical Laboratory
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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 28-06 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297476**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0052
pH:	8.50
Calculated TDS (mg/L):	12114.80
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	15.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3309.64	Chloride (Cl):	5000.00
Potassium (K):	52.76	Sulfate (SO_4):	281.00
Magnesium (Mg):	9.82	Bicarbonate (HCO_3):	3416.00
Calcium (Ca):	19.76	Carbonate (CO_3):	
Strontium (Sr):	4.88	Acetic Acid (CH_3COO)	
Barium (Ba):	4.07	Propionic Acid (C_2H_5COO)	
Iron (Fe):	0.43	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.37	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.07	Silica (SiO_2):	15.00

Notes:
B=7.66 Al=.02 Li=1.42

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4-2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.50	16.64	1.66	2.37	3.25	0.24	1.81	0.31	0.00	0.00	0.00	0.00	0.00	0.00	11.72	0.72
88.00	157.00	1.50	16.64	1.57	2.36	3.17	0.24	1.85	0.31	0.00	0.00	0.00	0.00	0.00	0.00	11.53	0.72
97.00	300.00	1.52	16.66	1.49	2.34	3.10	0.24	1.89	0.31	0.00	0.00	0.00	0.00	0.00	0.00	11.36	0.72
106.00	443.00	1.53	16.68	1.42	2.33	3.05	0.24	1.93	0.31	0.00	0.00	0.00	0.00	0.00	0.00	11.21	0.72
115.00	585.00	1.55	16.71	1.36	2.32	3.00	0.24	1.98	0.31	0.00	0.00	0.00	0.00	0.00	0.00	11.06	0.72
124.00	728.00	1.57	16.73	1.30	2.30	2.96	0.24	2.02	0.31	0.00	0.00	0.00	0.00	0.00	0.00	10.92	0.72
133.00	871.00	1.59	16.76	1.24	2.29	2.93	0.24	2.06	0.31	0.00	0.00	0.00	0.00	0.00	0.00	10.80	0.72
142.00	1014.00	1.61	16.79	1.20	2.27	2.91	0.24	2.10	0.31	0.00	0.00	0.00	0.00	0.00	0.00	10.67	0.72
151.00	1157.00	1.64	16.82	1.15	2.25	2.89	0.24	2.13	0.31	0.00	0.00	0.00	0.00	0.00	0.00	10.56	0.72
160.00	1300.00	1.66	16.85	1.11	2.24	2.88	0.24	2.17	0.31	0.00	0.00	0.00	0.00	0.00	0.00	10.46	0.72

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	0.89	0.00	0.00	0.54	3.70	0.00	0.00	5.58	0.33
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	0.89	0.00	0.00	0.84	5.29	0.00	0.00	5.71	0.33
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.90	0.00	0.00	1.20	7.05	0.14	1.42	5.91	0.33
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78	0.90	0.00	0.00	1.57	8.65	0.34	2.56	6.11	0.33
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.91	0.00	0.00	1.94	10.09	0.53	3.60	6.33	0.33
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.99	0.91	0.00	0.00	2.32	11.37	0.74	4.54	6.55	0.33
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	0.91	0.00	0.00	2.70	12.50	0.94	5.38	6.78	0.33
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19	0.91	0.00	0.00	3.08	13.48	1.15	6.12	7.02	0.33
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	0.91	0.00	0.00	3.46	14.33	1.36	6.75	7.27	0.33
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.92	0.00	0.00	3.84	15.06	1.57	7.29	7.51	0.33

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1553 East Highway 40
Vernal, UT 84078

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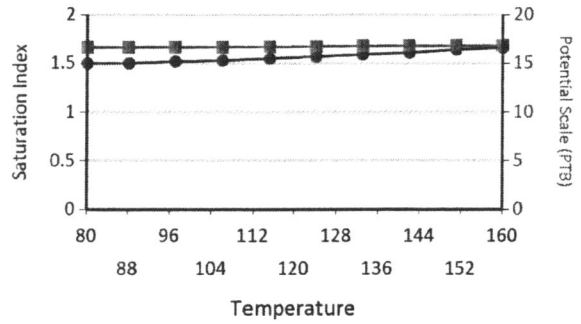
Water Analysis Report

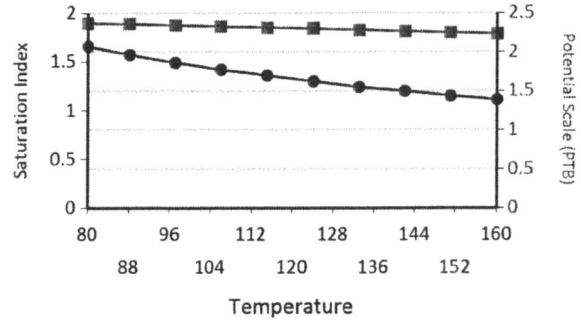
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

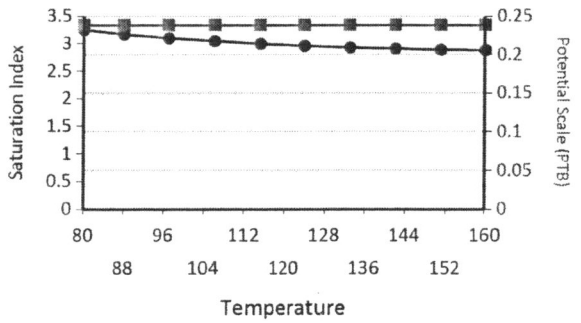
Calcium Carbonate



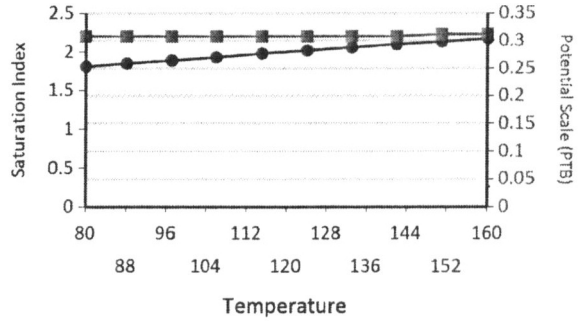
Barium Sulfate



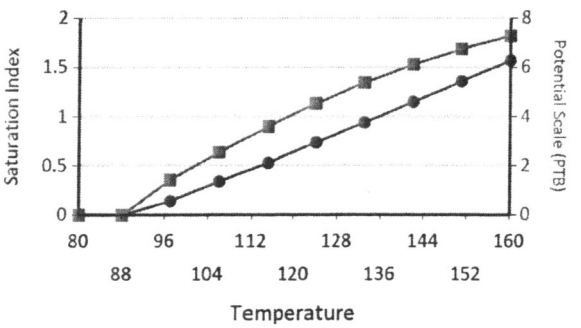
Iron Sulfide



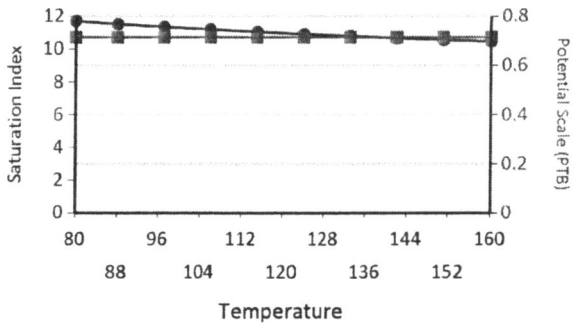
Iron Carbonate



Ca Mg Silicate



Zinc Sulfide



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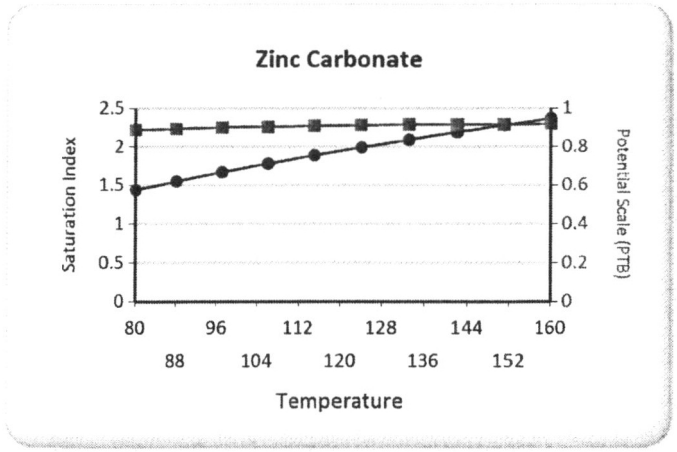
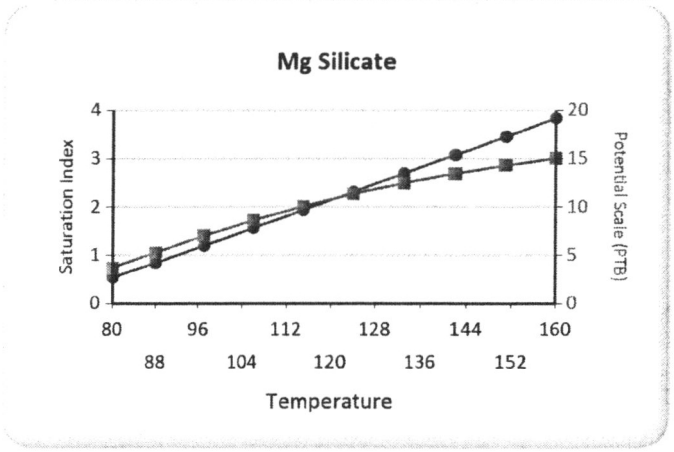
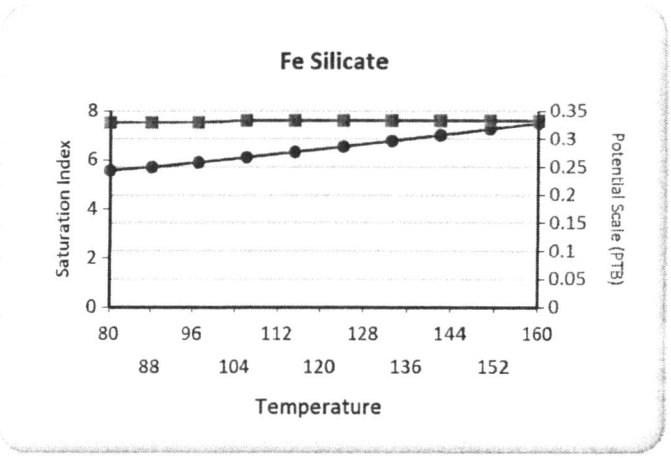
Water Analysis Report







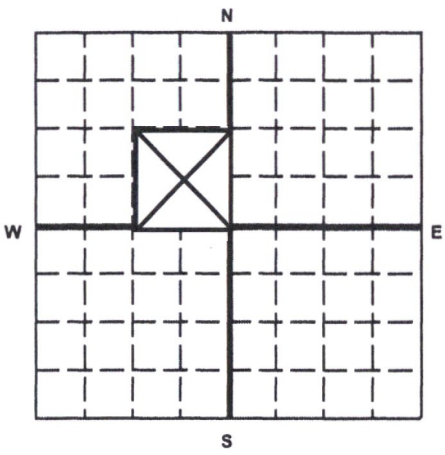
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04380

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [SE] 1/4 of [NW] 1/4 of Section [28] Township [5S] Range [3W]

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [1817] ft. frm (N/S) [N] Line of quarter section and [1897] ft. from (E/W) [W] Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells [111]

Lease Name [Ute Indian Tribe] Well Number [UTE TRIBAL 28-06]

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1466	1525	1976		0	0
February	13	1556	1594	2387		0	0
March	13	1571	1574	2285		0	0
April	13	1596	1564	2138		0	0
May	13	1551	1564	2065		0	0
June	13	1381	1564	2048		0	0
July	13	1394	1564	2726		0	0
August	13	851	1387	2125		0	0
September	13	30	48	0		0	0
October	13	2	6	0		0	0
November	13	454	1338	1794		0	0
December	13	1163	1638	2926		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 28-06 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262994**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.004
pH:	7.00
Calculated TDS (mg/L):	9567.68
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	1.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3450.95	Chloride (Cl):	5000.00
Potassium (K):	78.00	Sulfate (SO_4):	193.00
Magnesium (Mg):	23.00	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	55.00	Carbonate (CO_3):	
Strontium (Sr):	5.00	Acetic Acid (CH_3COO)	
Barium (Ba):	3.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	3.70	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.30	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.20	Silica (SiO_2):	23.54

Notes:
B=5 Al=0 Li=1.2

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	1.63	1.75	1.18	0.82	0.24	1.09	0.00	0.00	0.00	0.00	0.00	0.00	8.53	0.16
73.00	157.00	0.00	0.00	1.49	1.73	1.01	0.78	0.27	1.21	0.00	0.00	0.00	0.00	0.00	0.00	8.21	0.16
86.00	300.00	0.00	0.00	1.36	1.71	0.96	0.76	0.37	1.50	0.00	0.00	0.00	0.00	0.00	0.00	8.00	0.16
100.00	443.00	0.00	0.00	1.25	1.69	0.92	0.75	0.47	1.74	0.00	0.00	0.00	0.00	0.00	0.00	7.80	0.16
113.00	585.00	0.00	0.00	1.15	1.66	0.91	0.74	0.57	1.93	0.00	0.00	0.00	0.00	0.00	0.00	7.63	0.16
126.00	728.00	0.00	0.00	1.06	1.63	0.90	0.74	0.67	2.09	0.00	0.00	0.00	0.00	0.00	0.00	7.48	0.16
140.00	871.00	0.00	0.00	0.99	1.60	0.91	0.75	0.77	2.21	0.00	0.00	0.00	0.00	0.00	0.00	7.35	0.16
153.00	1014.00	0.05	2.48	0.93	1.58	0.94	0.75	0.86	2.31	0.00	0.00	0.00	0.00	0.00	0.00	7.23	0.16
166.00	1157.00	0.13	6.58	0.88	1.55	0.97	0.77	0.96	2.38	0.00	0.00	0.00	0.00	0.00	0.00	7.13	0.16
180.00	1300.00	0.21	10.74	0.84	1.52	1.02	0.78	1.06	2.44	0.00	0.00	0.00	0.00	0.00	0.00	7.04	0.16

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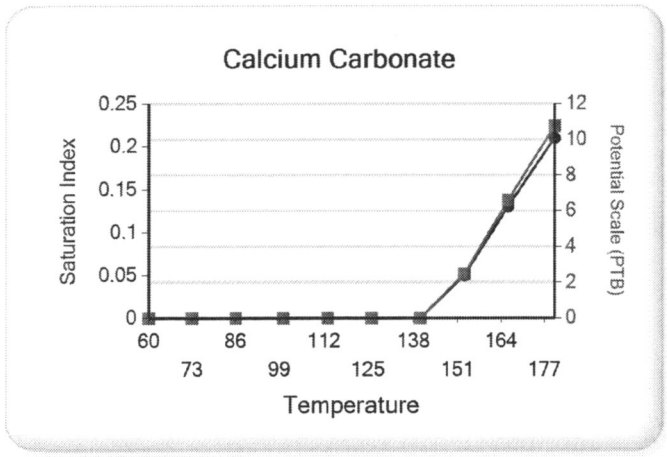
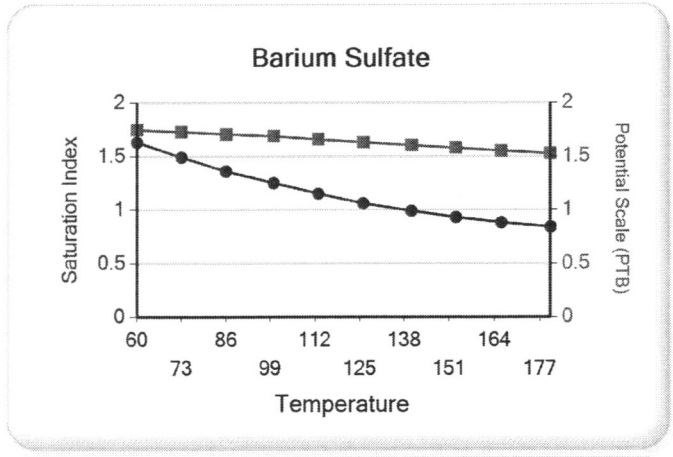
Water Analysis Report

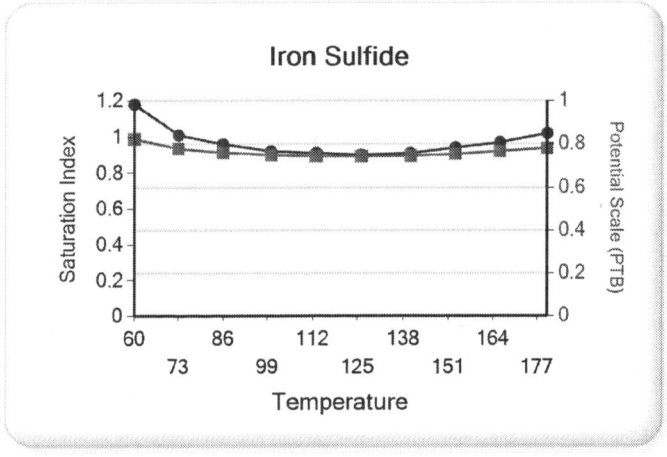
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.74
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.43
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	1.92
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.22	2.26
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83	2.48

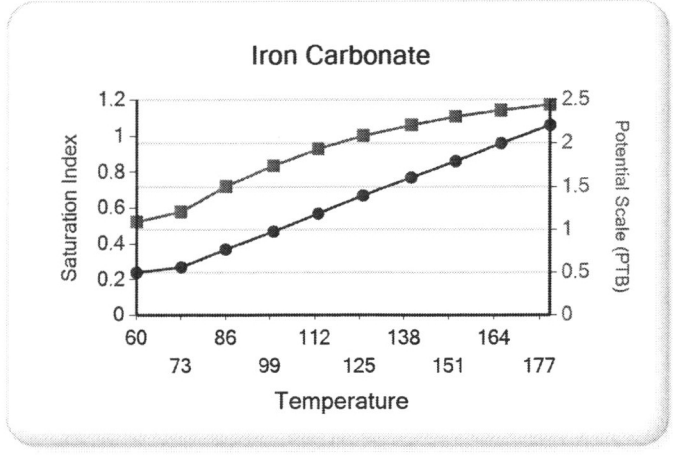
These scales have positive scaling potential under initial temperature and pressure: Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Fe Silicate









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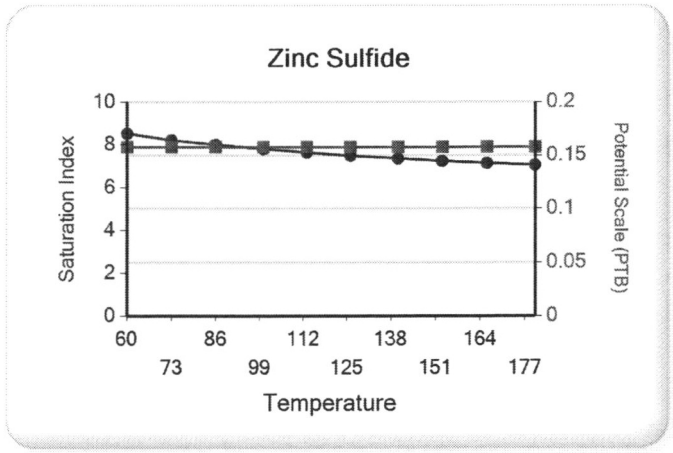
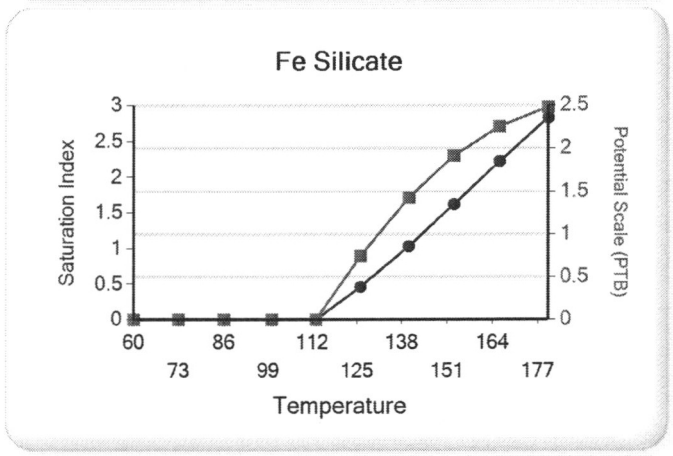
Water Analysis Report





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 22 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Minor Permit Modification for
Ute Tribal 28-06 (UT-04380)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Thank you for your letter of August 16, 1997, and minor permit modification requests for the above-cited Underground Injection Control (UIC) area permit and well.

Your four (4) injection zones which were individually fracture treated and established an average fracture gradient results, have been reviewed and found to satisfactorily justify your requested permit modification.

With the receipt of these documents, your well is hereby modified to reflect the **increased injection pressure** as requested. Changes to the previous Minor Permit Modification of **May 28, 1997**, are as follows:

MODIFICATION VERSION:

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of four (4) individual zones, within the Ute Tribal #28-06, which were individually fraced and established an average fracture gradient (Fg) of 0.79 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

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REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 22 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Lease under
UT20736 - 04380
Modification - Minor
Mod Approved

Ms. Kathy Turner
Geology/Petroleum Engineeri
Petroglyph Operating Compan
P. O. Box 1839
Hutchinson, KS 67504-1839

RE

DL (UIC)
or
0)

00000

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Pmax = [Fg - 0.433 (Sg)] d

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4659' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.79 - .433 (1.00)] 4659

Pmax = 1663 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.79 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 1663 psig.**

IS MODIFIED TO READ:

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of four (4) individual zones, within the Ute Tribal #28-06, which were individually fraced and established an average fracture gradient (Fg) of 0.80 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

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Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **written authorization** to inject **by the Environmental Protection Agency.**

In summary, these requirements for your newly converted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12).**

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test (MIT).**

All other provisions and conditions of the original permit remain as issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough (for)
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

Area 2 Date:

MINOR PERMIT MODIFICATION -- ROUTING SLIP

	TO		INIT	DATE
1.	ORIGINATOR Chuck Williams	8P2-W-GW	9/11/97	CEW.
2.	TECHNICAL REVIEW - ☐ CT (☒ PO)	8P2-W-GW	X	9/16/97
3.	PROOF READ Laura C.	8P2-W-GW	LC	9/11/97
4.	SADIE HOSKIE - CONCUR DAVIS	8TTAP		9/15/97
5.	DAVE HOGLE - CONCUR	8P2-W-GW	Taken for DEH	9/15/97
6.	STEVE TUBER - CONCUR	8P2-W		9/15
7.	KERRY CLOUGH - SIGNATURE	8P2		9/17/97
8.	ORIGINATOR - COPIES	8P2-W-GW	CEW	9/22/97
9.	JACKIE LEE - TRACKING	8P2-W-GW		9/22/97
10.	LAURA CLUTTS - MAIL		LC	9/24/97

WELL NAME: Ute Tribal #28-06

PERMIT NUMBER: UT 2736-04380

APPLICANT: Petroglyph

Contents of Package

Left Side:
UIC Minor Modification SOP
UIC Program Tracking
Operating Conditions Checklist
Cover Letter (Concurrence)
Cover Letter (Reading File)

Right Side:
Cover Letter (Sign)
Minor Modification (Sign)

COMMENTS: Increase Max Inj. Press. - Minor Mod.

Originator: Chuck W.

CONCURRENCE COPY

Ref: 8P2-W-GW

SEP 22 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
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P. O. Box 1839
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CEW 8P2-W-GW 9/11/97

8P2-W-GW 9/11/97

8P2-W 9/15/97

8P2-W 9-15-97

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Where: Pmax = Maximum surface injection pressure at wellhead

d = 4659' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.79 - .433 (1.00)] 4659

Pmax = 1663 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.79 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 1663 psig.**

IS MODIFIED TO READ:

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of four (4) individual zones, within the Ute Tribal #28-06, which were individually fraced and established an average fracture gradient (Fg) of 0.80 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

Pmax = [Fg - 0.433 (Sg)] d

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4659' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.80 - .433 (1.00)] 4659

Pmax = 1710 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.80 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 1710 psig.**

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Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

FCD: September 11, 1997, Chuck W.,
F:\DATA\WP\PETROGLF\MRMD2806.MIP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 22 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Minor Permit Modification for
Ute Tribal 28-06 (UT-04380)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Thank you for your letter of August 16, 1997, and minor permit modification requests for the above-cited Underground Injection Control (UIC) area permit and well.

Your four (4) injection zones which were individually fracture treated and established an average fracture gradient results, have been reviewed and found to satisfactorily justify your requested permit modification.

With the receipt of these documents, your well is hereby modified to reflect the **increased injection pressure** as requested. Changes to the previous Minor Permit Modification of **May 28, 1997**, are as follows:

MODIFICATION VERSION:

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of four (4) individual zones, within the Ute Tribal #28-06, which were individually fraced and established an average fracture gradient (Fg) of 0.79 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

Pmax = [Fg - 0.433 (Sg)] d

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4659' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.79 - .433 (1.00)] 4659

Pmax = 1663 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.79 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 1663 psig.**

IS MODIFIED TO READ:

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of four (4) individual zones, within the Ute Tribal #28-06, which were individually fraced and established an average fracture gradient (Fg) of 0.80 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

Pmax = [Fg - 0.433 (Sg)] d

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4659' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.80 - .433 (1.00)] 4659

Pmax = 1710 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.80 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well will be 1710 psig.**

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **written authorization** to inject **by the Environmental Protection Agency.**

In summary, these requirements for your newly converted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12).**

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test (MIT).**

All other provisions and conditions of the original permit remain as issued.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625. Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough (for)

Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

9/24/97 CW 3136C

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- Complete items 3, 4a, and 4b.
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SEP 24 1997

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
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3. Article Addressed to:
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P 164 014 367

4b. Service Type
☐ Registered ■ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
SEP 30 1997

5. Received By: *(Print Name)*
Gail Dennis

8. Addressee's Address *(Only if requested and fee is paid)*
OCT 9 1997

6. Signature: *(Addressee or Agent)*
X Gail Dennis

PS Form **3811**, December 1994 Domestic Return Receipt

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9/24/97 CW 3136C
P 164 014 367

28-04

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Receipt for Certified Mail
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Ms. Kathy Turner
Street & Number
Geology/Petroleum Engineerin
Technician
Post Office, State, & ZIP Code
Petroglyph Operating Company
P.O. Box 1839 Inc.
Hutchinson, KS 67504-1839

Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt Showing to Whom & Date Delivered	
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PS Form **3800**, April 1995

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

Ref: 8P2-W-GW

SEP 12 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #28-06 (UT04380)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Thank you for the recently submitted information pertaining to the above-referenced area permit and well. The Well Rework Record, injection zone fluid pore pressure survey, fracture treatment reports showing average ISIP of 1710 psi, and the successfully run mechanical integrity test, with chart, on the Ute Tribal #28-06 (UT2736-04380) have been reviewed and approved. Petroglyph Operating Company, Inc, has complied with all of the pertinent permit conditions (Part II, Section C. 2.) for the Antelope Creek Waterflood Area Permit.

Pleased be advised that administrative approval has been granted for injection of Class II fluids into the above referenced well for enhanced recovery of oil and gas. Please also be aware of the monitoring, recordkeeping and reporting requirements described in Part II, Section D of the permit and that the current **maximum surface injection pressure (Pmax) is limited to 1710 psig,** as modified by UIC Minor Permit Modification dated September, 1997.

Upon receipt of this letter, the Compliance Officer, Mr. John Carson will then take over routine matters involving well operations, future correspondence, forms, and reports. Please direct all correspondence to the attention of Mr. Carson at the above letterhead **(MAIL CODE ENF-T)** or contact Mr. Carson at (303) 312-6203. Thank you for your continued cooperation.

Sincerely,

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 12 1997

Issued under UT20736-04380
Authorization to Inject - Final

ng Technician
y, Inc.

: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
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Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
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Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

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Ute Indian Tribe

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Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

9/12/97 CW 3116C

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SEP 12 1997

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Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P 164 014 347

4b. Service Type
☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
SEP 15 1997

5. Received By: *(Print Name)*
Gail Dennis

6. Signature: *(Addressee or Agent)*
X Gail Dennis

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SEP 18 1997

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9/12/97 CW 3116C
P 164 014 347

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No Insurance Coverage Provided.
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Sent to	Ms. Kathy Turner Geology/Petroleum Engineering Technician
Street & Number	Petroglyph Operating Company, Inc.
Post Office, State, & ZIP Code	P.O. Box 1839 Hutchinson, KS 67504-1839
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995

CONCURRENCE COPY

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
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Sincerely,

CEW
8P2-W-GW
9/11/97

8P2-W-GW
9/11/97

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

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Uintah & Ouray Business Committee
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BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

FCD: September 12, 1997, Chuck W., F:\DATA\WP\PETROGLF\AUT-IN28.06